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WORK PLAN FOR
DRUM EXCAVATION

Higgins Disposal Site
Kingston, Somerset County, New Jersey

Prepared for:

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
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1.0 SITE BACKGROUND

The Higgins Disposal Site is located at 121 Laurel Avenue, Kingston, New Jersey and occupies approximately 38 acres in a rural/residential area. The property is owned by Clifford and Lisbeth Higgins and is currently used as an equestrian center and residence, with a small truck repair shop located in the northern corner of the property.

In the early 1950's until 1985, Mr. Higgins owned and operated a solid waste hauling service, unpermitted landfill, and unpermitted transfer station at the site. Drums and laboratory glassware buried on the site were discovered during remedial investigation work in March 1993 after VOCs were detected in several residential wells adjacent to the site in 1985. Soil and sediment samples were collected and analyzed by NJDEPE in 1986 and 1987. The site was placed on the National Priorities List on August 30, 1990. Geophysical fieldwork was conducted during the Summer of 1993 resulting in the detection of magnetic anomalies.

The northwest corner of the site contains a small pond with an overflow viaduct. This pond and the Dirty Brook Stream, located to the southwest of the site, drain into the Delaware-Raritan Canal. Trap Rock Industries, an active quarry, adjoins the property to the north and east, Laurel Avenue and contiguous residential properties abut the western and southern boundaries. Identified organic compounds have included methylene, chloride, toluene, bis (2-ethylhexyl) phthalate, di-n-butyl phthalate, tetrachloroethylene, chloroform and tetrachloroethane.

2.0 MOBILIZATION AND DEMOBILIZATION

Westinghouse will mobilize all personnel, supplies and equipment necessary to complete this project from the District Office in Horsham, Pennsylvania and from the Westinghouse Operations Center in Florence, New Jersey. All personnel who are assigned to the project will have completed a 40-hour Health and Safety course in accordance with OSHA 1910.120.

The following personnel will be mobilized for the drum excavation, and the site restoration activities at the Higgins Disposal Site:

- Response Manager (1)
- Working Foreman (1)
- Equipment Operators (2)
- Cleanup Technicians (3)
- Field Clerk (1)

Westinghouse also anticipates mobilizing the following equipment:

- CAT 963 Track Loader
- Backhoe (Case 580K or equivalent) (1)
- Kato 800 Excavator with Grappler and Bucket (1)
- 8' X 24' Decon Trailer (1)
- 8' X 20' Supply Storage Trailer (1)
- 10' X 50' Office Trailer (2)
- Porta Johns (2)
- Trash Dumpster Five Cubic Yards (1) (Non-hazardous Debris)

The following demobilization activities will be completed at the end of field work:

- Removal of all personnel, equipment, and material originally mobilized to the site after decontamination is completed;

- Restoration of the site to remove or mitigate surface features which may present physical hazards, i.e., holes, sharp protruding objects, etc.

3.0 SITE PREPARATION

Following mobilization of personnel and equipment to the site, the following activities will take place prior to the start of the actual removal process:

- Orientation of onsite field personnel to familiarize them with site history, health and safety requirements, and field procedures;
- Establish Work Zones (Exclusion Zone, Contamination Reduction Zone, and Support Zone)
- Construction of temporary decontamination pad;
- Construction of necessary site roadways;
- Organization of field office trailer equipped with necessary utilities and equipment trailer;
- Construction of staging area of equipment, supplies, and drums to temporarily store disposable clothing and other contaminated materials;
- Erection of wind sock at a selected location 5 to 10 feet above ground surface, for use in determining the prevailing wind direction during the air monitoring program;
- Clear and grub site roadways and designated work zones;
- Set up portable reservoir(s) for clean decon water and contaminated wastewater;
- Commence daily planning and documentation activities.

Additional detail is given below regarding key areas of the site. Specifically, the Work Zone and temporary drum storage area are highlighted below. A description of security measures is also provided.

3.1 WORK ZONES

Support Zone

The Support Zone (SZ) is the area that has been predetermined (through prior knowledge, air monitoring or soil sampling) to be free of contamination. The SZ will be located upwind

of project activities to the degree practicable. All support personnel, equipment, and supplies will be maintained in the SZ. In addition, the office trailer, break trailer, and supply trailer along with telephones are established and located in the SZ.

Contamination Reduction Zone

The Contamination Reduction Zone (CRZ) is located between the Exclusion Zone and the Support Zone. All personnel, tools, and small equipment, will enter and exit from the Exclusion Zone through the CRZ. At the Higgins Disposal Site, the decontamination trailer will be the entrance and exit point to the Exclusion zone.

Exclusion Zone

The Exclusion Zone (EZ) contains or potentially contains the highest concentrations of contaminants. Its perimeter is defined by the extent of soil/sludge/water contamination and airborne contaminant concentrations. Personnel enter and exit the Exclusion zone through the Decontamination Zone only - except in cases of site emergencies. Personnel wear prescribed personal protective equipment in the Exclusion Zone. PPE requirements within the Exclusion Zone may vary with regard to the activity being conducted, the area in which it is conducted, and air monitoring results. Only personnel who meet training and medical monitoring requirements may enter the Exclusion Zone.

3.2 TEMPORARY DRUM STORAGE

Westinghouse will construct a temporary onsite drum storage area in a location to be designated by the OSC and Westinghouse. This area will be within Area #2 and lined with an impervious material, protected from puncture and bermed to contain any possible leakage. At a minimum, this area will have the capacity to accumulate up to 100 drums with expansion capabilities.

3.3 SITE SECURITY

Security at the Higgins Disposal Site will include the use of a subcontracted security force. Guards will be posted and will patrol the area during off hours and on weekends and holidays. Security fencing has previously been installed at the site. These two measures will be augmented by the installation of security lights.

The security force will be provided with appropriate communication equipment and will have access to the Westinghouse emergency phone service.

4.0 DRUM EXCAVATION

Westinghouse drum excavation procedures shall be in accordance with those set forth in the USEPA document EPA/600/2-86/013 "Drum Handling Practices at Hazardous Waste Sites". In general, excavations shall proceed from the downwind end of each area towards the upwind end. Sufficient space shall be maintained between each excavation and the placement of excavated material to provide for stability of the side slopes. Work in and around excavated areas shall adhere to OSHA regulations including 29 CFR Part 1910, Permit Required Confined Space. A Westinghouse "Spotter" will direct the equipment operator(s) during all phases of excavation.

All excavated soil materials shall be stockpiled within bermed areas lined with impervious material to contain contaminated materials and surrounded with hay bales and silk fence sediment barriers. If left overnight, or during precipitation, these stockpiles shall be covered with an impermeable material.

The excavation will proceed in a controlled manner so as to minimize the potential dangers associated with excavation and extraction of buried drums or other forms of buried waste. The speed of the excavation will depend on soil conditions, groundwater conditions, the condition of the drums, and concentrations of potentially hazardous chemicals.

When drums or other metallic objects are uncovered in each excavation, machine excavating may be ceased and excavation may be completed manually. The structural integrity of the drums will dictate the use of machine or manual removal. The soil around the drums may be excavated using non-sparking hand tools or an industrial vacuum. When the face of the drum is exposed, a visual inspection of the drum will be made to determine whether it is empty, intact, leaking or potentially dangerous, as evidenced by buckling, corrosion and other deformations.

Drums that are found to be leaking, badly corroded, or deformed will be overpacked or the contents transferred (once identified) to a new or reconditioned drum.

Westinghouse will utilize equipment (drum grapples) that has flexibility for lowering exhumed drums into an overpack drum without causing drum contents to splash out. Any spills that occur when drums rupture will be cleaned up promptly using pumps or sorbent material.

If buried drums and containers are damaged in place or during removal resulting in the release of materials, Westinghouse will quickly collect those materials to the maximum

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extent practical. These materials shall be placed in clean drums or moved to a lined and bermed stockpile area previously designated by the OSC.

Empty drums, those which are excavated and found to have less than one inch of waste material will be staged near the contaminated soil pile on an impervious liner. Containers will be crushed by Westinghouse to minimize the volume of waste for disposal. The crushed drums will be shipped along with contaminated soil for offsite disposal.

During the course of the drum excavation, Westinghouse may be requested by the EPA to provide soil samples for either physical testing or chemical analyses. At the direction of the EPA, Westinghouse will place excavated soil in a impervious, lined area next to the excavation for sample collection by the EPA. Upon completion of the soil sampling, Westinghouse will backfill with certified clean material, remove to stockpile, or containerize the soil in accordance with accepted procedures.

As indicated by geophysical survey mapping and through visual observations, each excavation area will extend five to ten feet in each compass direction to ensure that all drums and laboratory containers have been removed. Certified clean fill of similar soils will be placed into the excavations, if required to reach the original grade. The backfilling of materials into the excavations will be performed in a manner that will minimize potential hazards. Open excavations will not, at any time, be left unsecured by the contractor.

The area designated for soil staging will be approximately 75 feet wide by 200 feet long. Each staging pad will be approximately 16 feet wide by 50 feet long and constructed of an impermeable geotextile fabric. Each pad will allow for the staging of approximately 100 cubic yards of soil. Initially, one staging cell will be constructed in the staging area for visibly contaminated soil. Additional staging pads will be constructed as required. Soils will be placed on the pads using a front end loader CAT 963. Since the pads will only be 16 feet wide, the loader will not be required to drive over the pad. The loader will approach and place the soils from the side of the pad.

5.0 DRUM MANAGEMENT

5.1 DRUM INSPECTION AND LABELLING

After drums have been excavated, they will be carefully inspected by the EPA and Westinghouse for any markings or labelling that may provide information regarding the nature of their contents origin, and date of disposal. Should such information be observed, Westinghouse will affix a sequential identification number to the drum by spray paint or other suitable permanent marking system. The EPA will photograph the original markings or labelling and Westinghouse's new identification number. The purpose of the photographs is to clearly record original markings or labelling in order to identify potential PRPs. Westinghouse will also record the markings or labels on a drum data sheet (discussed further below) in the event they cannot be read in the photographs.

Following inspection, all drums except those found to be empty will undergo sampling by Westinghouse in accordance with Westinghouse's Sampling and Analysis manual and then overpacked or its contents repacked. The overpacked drums will be affixed with an identification label by Westinghouse before being moved to the temporary drum storage area. Westinghouse will utilize an identification system that, at a minimum, includes these parts:

- Sequential identification number for each drum
- Class of drum contents (i.e., ignitable, high/low pH, and other pertinent information)

Since this is an enforcement oriented removal action Delivery Order, sampling will be conducted by the USEPA Environmental Service Division (ESD) with Westinghouse support to allow sampling access to the containers.

The sequential identification number on the label of an overpacked or repackaged drum will be identical to any identification number affixed to the exhumed drum contained within. In addition to the information described above, a description of each excavated drum (size and physical condition), its contents, time and date, the original burial location, and a description of the photographs taken, if any, will be clearly recorded on a drum data sheet. This form will be signed and dated by the person completing it. An example Drum Inspection Sheet of the type to be utilized for this project is included in Appendix A.

5.2 DRUM CLASSIFICATION

This activity will involve the segregation of drums, containers of empty drums and bulk wastes based on generators, content, and disposal options. Upon receipt of the analytical results, Westinghouse will categorize the drums into groups by content and disposal compatibility. Westinghouse/EPA will identify disposal options for each category, including

empty drum containers and contaminated soils, and prepare applications to the appropriate waste treatment/disposal facilities.

5.3 DRUM SEGREGATION

Westinghouse shall identify all drums whose contents exhibit similar characteristics based on analytical results. The drums containing materials and empty drums will be identified and marked accordingly. Westinghouse will stage the drums and containers in groups by category of disposal method. Compatibility testing will be performed at the discretion of the EPA, and compatible waste groups will be formed. If possible, Westinghouse will combine drum contents to reduce the number of drums requiring disposal.

5.4 EVALUATION OF DISPOSAL

Westinghouse will take appropriate steps to obtain approval from a minimum of three transportation services and treatment/disposal facilities for the various drum and container contents and any bulk waste categories. Westinghouse will complete and submit applications to the treatment/disposal facilities. Contact with the treatment/disposal facilities will be maintained to promote rapid turnaround of the disposal approval.

5.5 DRUM BULKING, LOADING, AND TRANSPORT

Westinghouse shall arrange for transportation of the drums and/or contents and containers of empty drums to the disposal facilities as soon a disposal approval is granted. Once the manifests are executed, Westinghouse will arrange transportation to the treatment/disposal facility on behalf of the EPA. Completed manifests will be submitted to the OSC for generator signature. Westinghouse will perform or assist the transporter in performing the loading operations for the various categories of drums and/or contents and containers. Empty drums that result from bulking or consolidation operations will be decontaminated, crushed, and placed in a rolloff container to be disposed of by Westinghouse in bulk and placed in suitable containers for offsite transportation and disposal.

6.0 DISPOSAL

Westinghouse will arrange for shipment of drums or drum contents, bulk wastes, and containers of empty drums after disposal options are finalized with treatment/disposal facilities, as approved by the OSC.

7.0 DECONTAMINATION PROCEDURES

Westinghouse shall provide in it's Health and Safety Plan decontamination procedures for both equipment and personnel to ensure that any materials encountered in the exclusion zone are removed in the contamination reduction zone. Decontamination of excavator and other equipment will include, but not necessarily be limited to, the following procedures:

1. physical removal of solid materials;
2. a complete pressure wash.

The equipment decontamination area will be a lined pad that is diked or bermed to collect rinse water. All materials generated during decontamination shall be containerized. These containers shall be accumulated on site in accordance with applicable federal and state regulations. The contractor shall be responsible for sampling, analysis and offsite disposal of these waste in accordance with all applicable regulations. Personnel decontamination procedures described in the Westinghouse Health and Safety Plan shall be implemented.

8.0 EROSION AND SEDIMENTATION CONTROL

The excavation and loading of drums and bulk waste shall be performed in a controlled manner to minimize erosion and the generation of contamination wastewater. The following controls shall be in effect at all times:

- No excavating shall take place during or immediately following any significant precipitation event.
- Disturbed areas shall be kept to a minimum.
- Excavated materials that are stockpiled will be placed on areas underlined with durable plastic sheeting. Those left overnight or during precipitation will be covered with an impermeable material so that precipitation is directed off the stockpile completely.
- The areas designated for excavation will have erosion and sediment control barriers. The barriers will be a combination of hay bales and silk fence. The hay bales will be position as close as possible to the excavated area, to control the possibility of run on. The silk fence will be installed around the entire work area. Upon completion of all excavation activities, site restoration will begin. Barrier removal will take place during this phase of work or at the discretion of the OSC.

9.0 CONTROL OF SURFACE AND GROUNDWATER

In the course of trenching and drum removal activities, there is a possibility that water will collect in the excavations. Water may originate as groundwater in certain areas of the Site or as uncontrolled surface water run-on resulting from precipitation. Water collecting in the trenches is susceptible to becoming contaminated due to its coming in contact with contaminated soils already present or with any spillage from drums resulting from excavating and removal.

Should significant quantities of groundwater collect in excavations, Westinghouse will pump the water into portable reservoir or tanks periodically. Prior to backfilling, the excavation sites will be pumped of residual waters as necessary. Samples of the groundwater will be obtained and analyzed in accordance with procedures in the Westinghouse Sampling and Analysis Plan. Based on the results of these analyses, the OSC/Westinghouse will determine the appropriate method of disposal. Westinghouse will select the most cost-effective treatment and disposal method and recommend that to the OSC for concurrence. Following the OSC concurrence, Westinghouse will dispose of the contaminated water off site, in accordance with applicable regulations.

10.0 QUALITY ASSURANCE AND QUALITY CONTROL

Quality Assurance and Quality Control (QA/QC) at the Higgins Disposal Site will consist of two basic components. QA/QC for construction activities and secondly for sampling and analysis activities.

QA/QC for construction and related field work will be provided through the use of checklists (the checklists will be provided in the final work plan).

QA/QC for sampling and analysis will be implemented through the use of the Westinghouse Quality Assurance/Quality Control Sampling and Analysis and Waste Characterization Manual and the Quality Assurance Program Plan. These documents were provide to the EPA in the Westinghouse Proposal dated July 20, 1993 as Appendices D and E respectively.

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APPENDIX A

Drum Inspection Sheet

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WESTINGHOUSE REMEDIATION SERVICES, INC.
DRUM INSPECTION SHEET

JOB NUMBER: _____
JOB NAME: _____ DATE: _____

DRUM NUMBER: _____ TIME: _____

TYPE OF CONTENTS: ☐ SOLID ☐ LIQUID ☐ SLUDGE
☐ LAB PACK ☐ EXPLOSIVE
☐ OTHER _____

COLOR: _____ PH: _____

LOCATION NUMBER: _____ GRAIN SIZE: _____

DRUM SIZE: ☐ 55-GAL ☐ 42-GAL ☐ 30-GAL
☐ 5-GAL ☐ OTHER _____

DRUM TYPE: ☐ STEEL ☐ POLY ☐ FIBER

AMOUNT OF CONTENTS: ☐ FULL ☐ 3/4 FULL ☐ 1/2 FULL
☐ 1/4 FULL ☐ EMPTY WITH RESIDUAL

SAMPLE METHOD: ☐ PIPETTE ☐ TROWEL
☐ OTHER _____

DRUM MARKINGS: _____

COMMENTS: _____

DRUM LAYERS:

DESIGNATION	STATE

SIGNATURE: _____

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APPENDIX B

QA Checklist

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EPA ERCS REGION II

QA CHECKLIST/INSPECTION FORM

ACTIVITY	INSPECTED (TIME/INITIALS)
Zones Designated	
Decon Pad Sump - Free of Debris	
Erosion Control Silt Fence Upright and stable Soil level <1/2	
Site Preparation Zones Designated Signs Intact	
Temporary Drum Storage Liner - Meets Material Spec Leaks Berm - Intact	
Site Security Fencing - Sound Security Lighting - Working Order	
Drum Excavation Open Areas Secured Side Slopes Conform to OSHA EPA Protocol Used Stock Piles Liner - Meet Material Spec Cover - Meet Material Spec Intact	
Backfill Certification Received	
Drums Labelled Condition Noted Photographed by TAT Drum Logs Complete	
Transport Manifest OK Disposal Profile OK Transporters Papers in Order Gates - Sealed Tires/Wheels Free of Soil	

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ACTIVITY	INSPECTED (TIME/INITIALS)
Decontamination Equipment Sampled OK to Remove From Site Decon Pad Sump Free of Debris	
Sanitary Facilities Unoffensive Neat and Orderly Supplied	

Corrective Action Required: _____

_____

_____

Signature: _____

Date: _____